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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/813,027

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Boris Ginzburg

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EXAMINER

NGUYEN, LONG P

ART UNIT

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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/813,027

Applicant(s)

GINZBURG ET AL.

Examiner

Long P. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/09/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) The Names Of The Parties To A Joint Research Agreement: See 37 CFR 1.71(g).
- (e) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.
- (f) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
 - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
 - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are

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solved by the applicant's invention. This item may also be titled "Background Art."

- (g) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (h) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (i) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.
- (j) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (k) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if

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an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).

- (I) Sequence Listing. See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 40-43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter on the basis of nonfunctional descriptive material.

Claim 40-43 recites, “An article of manufacture...having stored thereon instruction...when executed” in lines 1-2.

In claim 40, “instruction” is computer program claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs (i.e. instruction) do not define any structural and functional interrelationships between the computer

program (i.e. instruction) and other claimed elements of a computer, which permit the computer program's functionality to be realized. Thus, the claim is non-statutory.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 9,12-16, 20-21, 24-26, 28-29, 32, and 40-42, is rejected under 35 U.S.C. 102(e) as being anticipated by Bing et al. (US 2004/0131084, Hereinafter, Bing).

As for claim 1, Bing shows dividing a frequency bandwidth of a channel into two frequency sub-channels **[0020]** to be used to transport two acknowledgment signals **[0045]** that acknowledge reception of a multicast transmission **[0043]** of a data packet by a group that includes stations **[0046]**.

As for claim 2, 15 and 29, Bing shows performing a first multicast transmission of a first data packet to the group **[0046]**; and performing a second multicast transmission of a second data packet **[0046]** after at least a subset of stations of the group acknowledged a reception of the first frame **[0045]**.

As for claim 3 and 16, Bing shows retransmitting the data packet until an acknowledgement signal is received from a subset of stations of the group **[0046]**.

As for claim 9 Bing shows acknowledging **[0045]** reception of a data packet multicast transmitted **[0043]** over a dedicated frequency sub-channel **[0020]** of a wireless communication system.

As for claim 12, Bing shows transmitting an acknowledgement frame to a multicast transmitting station over the dedicated frequency sub-channel **[0020]**.

As for claim 13 and 20, Bing shows transmitting a predetermined signal pattern to a multicast transmitting station over the dedicated frequency sub-channel **[0020]**.

As for claim 14, Bing shows a channel divider to divide a frequency bandwidth of a channel into two frequency sub-channels **[0020]** to be used to transport acknowledgment signals **[0045]** to acknowledged a reception of a multicast transmission by two stations of a group of stations **[0043]**; and an allocate to allocate the two frequency sub-channels to the two stations **[0046]**.

As for claim 21, Bing shows a generator to generate an acknowledgement signal **[0045]**; and a transmitter to transmit the acknowledgement signal to respond on a reception of a data packet **[0045]** of a multicast **[0043]** transmitted over a dedicated frequency sub-channel of a wireless communication system **[0020]**.

As for claim 24, Bing shows wherein the acknowledgement signal comprises an acknowledgement message **[0045]**.

As for claim 25, Bing shows the acknowledgement signal comprises a predetermined pattern **[0047]**.

As for claim 26, Bing shows wherein the acknowledgement signal comprises a modulated carrier **[0020]**, **Note: coding of the sub- carriers.**

As for claim 28, Bing shows a channel divider to divide a frequency bandwidth of a channel into frequency sub-channels **[0020]** to be used for acknowledged **[0045]** a reception of multicast **[0043]** transmission by a group of stations; and an allocator to allocate at least some sub-channels to a subset of stations of the group to acknowledge **[0045]** reception of the data packet over the at least some sub-channels **[0020]** **[0046]**.

As for claim 32, Bing shows a generator to generate an acknowledgement signal **[0045]**.

As for claim 40, Bing shows a storage medium (**Figure 1, e.g. data memory**), having stored thereon instructions **[0038, Note: the BS have the ability to analyze information received from the mobile terminal therefore the BS must have instruction stored thereon to analyze the information]**, that when executed, result in: dividing a frequency bandwidth of a channel into two frequency sub-channels **[0020]** to be used to transport two acknowledgment **[0045]** signals that acknowledge reception of a multicast transmission **[0043]** of a data packet by a group that includes two stations **[0046]**.

As for claim 41, Bing shows wherein the instructions **[0038, Note: the BS have the ability to analyze information received from the mobile terminal therefore the**

BS must have instruction stored thereon to analyze the information], when executed, result in: a first multicast transmission of a first data packet to the group **[0046]**; and performing a second multicast transmission of a second data packet **[0046]** after at least a subset of stations of the group acknowledged a reception of the first frame **[0045]**.

As for claim 42, Bing shows wherein the instructions **[0038, Note: the BS have the ability to analyze information received from the mobile terminal therefore the BS must have instruction stored thereon to analyze the information]**, when executed, result in: retransmitting the data packet until an acknowledgement signal is received from a subset of stations of the group **[0046]**.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4, 10, 17, 22, 30, and 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Khan et al. (US 2002/0143951, Hereinafter, Khan).

As for claim 4, 10, 17, 22 and 30, Bing shows an OFDM system implementing multicast service, but Bing do not show receiving a group membership request from at least a subset of the stations of the group; and sending membership acceptance to the

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subset of stations of the group. However, Khan show receiving a group membership request from at least a subset of the stations of the group [0030]; and sending membership acceptance to the subset of stations of the group [0030]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the multicast service of Bing with the multicast authenticate and reply of Khan in order notify the client of successfully joining the multicast group (Khan, [0030]).

As for claim 43, Bing shows wherein the instructions **[0038, Note: the BS have the ability to analyze information received from the mobile terminal therefore the BS must have instruction stored thereon to analyze the information]**, when executed, result in: but Bing do not show receiving a group membership request from at least a subset of the stations of the group; and sending membership acceptance to the subset of stations of the group. However, Khan show receiving a group membership request from at least a subset of the stations of the group [0030]; and sending membership acceptance to the subset of stations of the group [0030]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the multicast service of Bing with the multicast authenticate and reply of Khan in order notify the client of successfully joining the multicast group (Khan, [0030]).

6. Claim 5, 18, 31, and 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Fukutomi (US 2002/0091926).

As for claim 5, 18, and 31 Bing shows an OFDM system with multicast service but do not show the authenticating a station of the group. However, Fukutomi show the authenticating a station of the group **[0053]**. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the multicast service of Bing with the authenticating of Fukutomi in order to deter unauthorized client to receive the multicast data.

As for claim 33, Bing shows an OFDM system with multicast service but do not show a requestor to request a group membership; and a memory to store a group membership token. However Fukutomi show a requestor to request a group membership; and a memory to store a group membership token (**figure 2, Note: IP addresses**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify multicast service of Bing with the authenticate table of Fukutomi in order to authentic multicast client.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Cervello et al. (US 2006/0029023).

As for claim 6, Bing shows acknowledging multicast data in sub-channel, but Bing does not show allocating sub-channel based on a signal strength of a received acknowledgement signal. However Cervello show allocating sub-channel based on a signal strength of a received acknowledgement signal (**Abstract**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the OFDM

system of Bing with the selecting the channel based on signal quality of Cervello in order to provide efficient data transfer in a telecommunication network.

8. Claim 7 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Rajahalme (US 2003/0007499).

As for claim 7, and 18, Bing shows a multicast group, but do not show allocating a station to the group based on received signal strength of the station. However, Rajahalme show allocating a station to the group based on received signal strength of the station **[0022]**. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the multicast group of Bing with allocating group member based on signal strength of Rajahalme in order to determine the optimal way of radio resource usage to deliver multicast information.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Rajahalme as applied to claim 7, further in view of Bowers et al. (US 2004/0230664, Hereinafter, Bowers).

As for claim 8, Bing in view of Rajahalme show allocating station into multicast group, but do not show allocating a first multicast address to the station when the station is included in a first group; and allocating a second multicast address to the station when the station is included in a second group. However, Bowers show a first multicast address to the station when the station is included in a first group; and

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allocating a second multicast address to the station when the station is included in a second group **[0010]**. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify one multicast group of Bing in view of Rajahalme with the multiple multicast addressing group of Bowers in order for the data server to transmit correct data packet to a specific group.

10. Claim 11, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Kall et al. (US 2004/0246985, Hereinafter, Kall).

As for claim 11, and 23 Bing shows an OFDM system utilizing multicast service, but do not show transmitting a burst signal to a multicast transmitting station for a predetermined period of time. However, Kall show transmitting a burst signal to a multicast transmitting station for a predetermined period of time **(Abstract)**. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the OFDM system of Bing with the waiting for a predetermined period of time of Kall in order to indicate a ready state to receive multicast data.

11. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Jasinski et al. (US 5,142,279, Hereinafter, Jasinski).

As for claim 27, Bing show transmitting acknowledgement of multicast data but does not show the acknowledgement signal comprises an unmodulated carrier. However Jasinski show the acknowledgement signal comprises an unmodulated carrier

(Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the acknowledgement of Bing with the Unmodulated carrier of Jasinski in order to reduce processing overhead.

12. Claim 34, and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Kapoor et al. (US 6,795,424, Hereinafter, Kapoor).

As for claim 34, Bing shows transmit an acknowledgement signal [0045]; a generator to generate the acknowledgement signal [0045]; and a transmitter to transmit the acknowledgement signal to responded on a reception of a data packet of a multicast [0043] transmitted over a dedicated frequency sub-channel of a wireless communication system [0020], but Bing does not show a dipole antenna. However Kapoor shows a dipole antenna (Col. 17 line 35). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the transmission system of Bing with the Dipole antenna of Kapoor in order to reduce the manufacturing cost of the applications (Kapoor Col. 17 line 43).

As for claim 37, Bing shows two stations to transmit acknowledgement signal [0045] to respond on a reception of a data packet of a multicast [0043] transmitted over two dedicated frequency sub-channels [0020], respectively.

As for claim 38, Bing shows an access point (Figure 1, e.g. BS) to dividing a channel of the wireless communication into two dedicated frequency sub-channels [0020] (Figure 10).

As for claim 39, Bing shows the access point (**figure 1, e.g. BS**) is able to group the two stations into a group and to transmit multicast transmission to the group **[0045]**.

13. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Kapoor as applied to claim 34 above, and further in view of Khan et al. (US 2002/0143951, Hereinafter, Khan).

As for claim 35, Bing shows an OFDM system implementing multicast service, but Bing do not show a requestor to request a group membership station; and a receiver to receive a group membership acceptance. However, Khan show a requestor to request a group membership station **[0030]**; and a receiver to receive a group membership acceptance **[0030]**. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the multicast service of Bing with the multicast authenticate and reply of Khan in order notify the client of successfully joining the multicast group (Khan, **[0030]**).

14. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bing in view of Kapoor as applied to claim 34 above, and further in view of Kall et al. (US 2004/0246985, Hereinafter, Kall).

As for claim 36, Bing shows an OFDM system utilizing multicast service, but do not show transmitting a burst signal to a multicast transmitting station for a predetermined period of time. However, Kall show transmitting a burst signal to a

multicast transmitting station for a predetermined period of time (**Abstract**). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the OFDM system of Bing with the waiting for a predetermined period of time of Kall in order to indicate a ready state to receive multicast data.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long P. Nguyen whose telephone number is (571)-272-9740. The examiner can normally be reached on Monday - Thursday 7:30 - 5:00 EST Alternate Friday 7:30-4:00 EST.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Long Nguyen

A handwritten signature in black ink, appearing to read 'Doris H. To', with a stylized, cursive script.

DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600